

**REMARKS**

The indication that claim 43 would be allowable if rewritten in independent form is noted with appreciation. However, this claim is not being rewritten at this time since it is believed that all the claims it depends on are also patentable.

***Claim Rejections – 35 USC §112***

The withdrawal of all 35 U.S.C. 112 rejections is noted with appreciation.

***Claim Rejections – 35 USC §103***

Claims 1 – 12, 14 – 17, 22, 25 – 28, and 39 – 42 were rejected under 35 U.S.C. 103(a) as being unpatentable over Sobolev (US 5,30,488) in view of Fitzgerald et al. (US 4,842,241). This rejection is respectfully traversed.

In the Advisory Action, the Examiner stated that the previous declaration of Mr. Rahe did not compare the concrete formwork panel that is the subject of the present application with the closest prior art. Mr. Rahe has now done that. Exhibit C shows the results for the best metal/plastic laminate concrete formwork panel that Mr. Rahe has tested, and summarizes the tests on other metal/plastic laminates he has tested. See Supplemental Declaration of Edward Rahe, paragraphs 7 – 16. It is not known if this summary includes the panel of Sobolev, but if it does not, the only conclusion is that the panel of Sobolev was never used as a concrete formwork panel, because, as Mr. Rahe says in paragraph 10, if it was, he would have seen it.

The Supplemental Declaration of Edward Rahe points out that the  $\frac{3}{8}$ -inch panel of the invention tested 10% better than the  $\frac{1}{2}$ -inch panel of the best previous plastic/metal laminate panel. See Supplemental Declaration of Edward Rahe, paragraph 13. The  $\frac{3}{8}$ -inch panel of the invention tested 25% better than the best previous plastic/metal laminate of the same thickness. See Supplemental Declaration of Edward Rahe, paragraph 15. The Supplemental Declaration of Edward Rahe also states that all other metal/plastic panels tested two to three times worse than the panel according to the invention. He gives one example of this in paragraph 11 of the Supplemental Declaration of Edward Rahe. Mr. Rahe points out that this is “really amazing” because it goes against the grain of years of testing of concrete formworks panels. See Supplemental Declaration of Edward Rahe,

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paragraph 16. It could not be clearer that the test results for the concrete formwork panel according to the invention meet both the superior and the unexpected results requirement of the patent law, either of which are sufficient to overcome a prima facie case of obviousness based on structural similarity. See MPEP 716.02 – 716.02(g) and 2144.09 and the cases cited therein.

With regard to claim 1, Sobolev does disclose the use of steel in a laminate panel, as the Examiner points out. However, the disclosure of steel is minimal. In a patent with ten pages of figures and 38 columns of specification and in which 51 examples of laminates are given, steel is only used in one example, and that example failed. The Examiner argues that a similar panel with aluminum also failed and that the application discloses that another aluminum laminate panel made with a "slightly more flexible epoxy resin" did not fail, and concludes that that suggests that a steel panel made with a "slightly more flexible epoxy resin" would not fail. The Supplemental Declaration of Edward Rahe points out that few plastic and plastic laminate panels hold up to the deflection criteria; therefore, to assume that a particular panel will work is pure speculation. In particular, he states that the assumption of the Examiner is erroneous, and that one skilled in the art would not utilize a panel, such as the one in Sobolev, that showed "slight cracking". See Supplemental Declaration of Edward Rahe, paragraphs 21 – 24.

The Supplemental Declaration of Edward Rahe also shows that one skilled in the art would not combine Fitzgerald et al. and Sobolev because Fitzgerald et al. does not disclose a concrete formwork panel but a mold. To one skilled in the art, a concrete formwork panel is a panel that can be connected to other panels to make a formwork and then disassembled and used again. It points out that Fitzgerald et al. internally supports this position at column 1, line 7, where it states that the molds are only used for forming test specimens. He concludes that one skilled in the art of concrete formwork panels would not read Fitzgerald et al. and Sobolev and come to the conclusion that high-density polyethylene could be laminated with steel to make a concrete formwork panel because: a) the combination does not teach that high-density polyethylene can be laminated with steel; and b) that such a lamination would not stand up to abuse. Since his experience with

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plastic laminates is that they generally do not work, such a conclusion based on Sobolev and Fitzgerald et al. is pure speculation. See Supplemental Declaration of Edward Rahe, paragraphs 17 – 21. Thus, to one skilled in the art, the combination of Sobolev and Fitzgerald et al. does not even establish a prima facie case of obviousness, because there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine teachings to make such a laminate, and because there is not a reasonable expectation of success. MPEP 4142 and MPEP 2143 – 2143.03.

For the above reasons, claim 1 is patentable. Claims 2 – 12, 14 – 17, 22, and 25 – 28 all depend on claim 1, and include all of the limitations of claim 1, and are therefore patentable at least for that reason. *In re Fine*, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988) at headnote 4 and MPEP 2143.03. In addition, none of the limitations in the dependent claims are shown in the art for panels made of steel facing with a high-density polyethylene core. Certain of the claims, such as the foam density limitations of claims 11 and 12, include limitations nowhere disclosed in any of the references for *any* panel. If a claim includes just one limitation that is not disclosed in the prior art, the claim is patentable. See MPEP 2143.03; *In re Glass*, 176 USPQ 489, 491 (CCPA 1973); *In re Saether*, 181 USPQ 36, 39 (CCPA 1974) at headnote 1; *Ex parte Petersen*, 228 USPQ 217, 218 (PO Bd Pat App & Inter 1985) at headnote 1; and *In re Fine*, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988) at headnote 3. The Examiner says that one could get these by experiment and cites *In re Boesch*. The *Boesch* facts were quite different than those at present. In *Boesch*, the claimed optimized values were all within ranges disclosed in the prior art, and the prior art suggested changing the values in the direction covered by the claims. Here, the values claimed are outside the ranges in the prior art. Likewise, all other allegations of the Examiner that specific limitations are obvious without showing a reference that suggests it, such as the limitations of claims 6 – 8, 14 – 17, and 22, are challenged on the basis that the Examiner's opinion is not a suitable replacement for a reference. *Ex Parte Nouel*, 158 USPQ 237, 239 (POBA 1967) at headnote 2.

With respect to claims 39 – 42, these claims do not appear to be addressed by the

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Office Action except in paragraph 21; therefore, we shall address them below.

Claim 18 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Sobolev in view of Fitzgerald et al. and further in view of Toedter. This rejection is respectfully traversed. Claim 18 is dependent on claim 14 which is dependent on claim 1. Both claims 1 and 14 are patentable for the reasons given in the Supplemental Response; therefore, claim 18 is also patentable for this reason. *In re Fine*, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988) at headnote 4 and MPEP 2143.03. In addition, none of the cited references show a double-thick flange on the end of a panel. Toedter is cited not to show a double-thick flange, but to provide motivation for making a double-thick flange. It shows a decorative panel bent over on itself to form a double-thick panel, but this is taught to be done to provide a finished appearance in the decorative panel and resistance to crush. See column 1, lines 47 – 57. Since the device claimed is a concrete formwork panel in which the motivation of a finished appearance is irrelevant, and resistance to crush is not a problem, since the single-thickness panel is sufficiently crush resistant, Toedter cannot effectively provide motivation.

Claims 19 and 20 were rejected under 35 USC 103(a) as being unpatentable over Sobolev in view of Fitzgerald et al. and further in view of Lee (US 6,295,786). This rejection is respectfully traversed. These claims depend on claim 1, which is patentable, and therefore are also patentable. *In re Fine*, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988) at headnote 4 and MPEP 2143.03. In addition, Lee has nothing to do with concrete and the idea of even making a columnar panel is merely added as an afterthought. The Examiner is using the hindsight of the invention itself to find this combination.

Claim 23 was rejected under 35 USC 103(a) as being unpatentable over Sobolev in view of Fitzgerald et al. and further in view of Yoshida et al. (US 6,117,521). This rejection is respectfully traversed. This claim depends on claim 1, which is patentable, and therefore is also patentable. *In re Fine*, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988) at headnote 4 and MPEP 2143.03. In addition, none of the references discloses a rib attached to a metal backing layer.

Claims 23 and 24 were rejected under 35 USC 103(a) as being unpatentable over

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Sobolev in view of Fitzgerald et al. and further in view of Gallis et al. (US 4,473,209). This rejection is respectfully traversed. These claims depend on claim 1, which is patentable for the reasons given above, and therefore they also are patentable. *In re Fine*, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988) at headnote 4 and MPEP 2143.03.

Claims 39 – 41 were rejected under 35 USC 103(a) as being unpatentable over Sobolev. This rejection is respectfully traversed. With respect to claim 39, the limitation of a foam plastic with 32% or more gas by volume is not shown or suggested in the art. As discussed in more detail below, only one example of a foam plastic gas by volume is given in Sobolev, and that is 26%. No other gas per volume foamed plastic data is given in Sobolev. The Examiner states that Sobolev does not give a range, but only shows that variation of volume of gas per unit volume of foam core layer is possible. That is not true since only one data point is given. The exact statement of Sobolev is that "In a number of cases, core density reductions of 30% were readily achieved without loss of important laminate properties." The phrase "In a number of cases" indicates that, in the majority of cases, important laminate properties were lost. The fact that no cases of core density reductions of more than 26% were given in Sobolev does create a maximum of range. Further, the statement implies that, in the range above the core reductions of 30%, important laminate properties were lost in all cases. The Supplemental Declaration of Edward Rahe is a declaration by one skilled in the art and supports this position. See Supplemental Declaration of Edward Rahe, paragraphs 25 – 27.

The Supplemental Declaration of Edward Rahe also states that delamination is very serious in concrete formwork panels. Further, the Supplemental Declaration of Edward Rahe states that, because lamination is such a serious problem, based on Sobolev, at best it would take years of experimentation to do what the Examiner suggests to determine an optimum value of gas by volume. More likely, however, says Mr. Rahe, one skilled in the art of concrete formwork panels would not even bother to make such tests, since Sobolev suggests such panels would delaminate. Thus, a prima facie case of obviousness is not made out for claim 31 because a key limitation of the claim, a foam plastic of 32% or more gas by volume, is not disclosed in the prior art. MPEP 2143.03. "It is error to ignore

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specific limitations distinguishing over the references." *In re Glass*, 176 USPQ 489, 491 (CCPA 1973). See also *In re Saether*, 181 USPQ 36, 39 (CCPA 1974) at headnote 1; *Ex parte Petersen*, 228 USPQ 217, 218 (PO Bd Pat App & Inter 1985) at headnote 1; and *In re Fine*, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988) at headnote 3. Further, if a prima facie case of obviousness is made out, the unexpected superiority of the concrete formwork panel according to the invention overcomes it. See MPEP 716.02 – 716.02(g) and 2144.09 and the cases cited therein. Therefore, claim 39 is patentable.

Claims 40 and 41 depend on claim 39, which is patentable, and therefore are also patentable. *In re Fine*, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988) at headnote 4 and MPEP 2143.03. In addition, they recite ranges of gas by volume that are far above any disclosure of Sobolev, and are patentable for that reason also.

Claim 42 was rejected under 35 U.S.C. 103(a) as being unpatentable over Sobolev in view of Fitzgerald et al. This rejection is respectfully traversed for the same reasons as given above in the discussions of claim 1. Further, this claim depends on claim 39, which is patentable, and therefore is also patentable. *In re Fine*, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988) at headnote 4 and MPEP 2143.03.

#### **Responses To The Examiner's "Responses"**

The Examiner dismisses the Supplemental Declaration of Edward Rahe because he is of the opinion that the comparison must be with "the closest prior art which is commensurate with the scope of the claims", and his opinion that the closest prior art is the Examiner's proposed modification of the Sobolev panel in view of Fitzgerald et al. First of all, the only citation the Examiner has ever given for the proposition that the comparison must be with "the closest prior art which is commensurate with the scope of the claims" is MPEP 716.02(b), which the Examiner cited on page 6 of paper 7 (the Advisory Action dated 10/23/03) and again on page 12 of paper 13 (the Office Action dated 02/17/04). However, MPEP 716.02(b) merely restates the proposition of *Ex parte Gelles* (discussed below) that the evidence should show that the results are both unexpected and unobvious and of both statistical and practical significance. It says nothing about what the comparison should be made against. Thus, this part of the Examiner's argument is based

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on nothing. Further, the proposition that the comparison must be made against some modification of a prior art reference is maddening, because the Examiner is in fact requiring that the comparison be made with something that exists only in the Examiner's mind. The Examiner states that if this is not possible, the comparison should be made with Sobolev. However, this is also not possible because the deflection measurement used in Sobolev is a three-point test typically used to test panels for trucks, while the test Rahe was equipped to make was a test in which pressure is applied to the entire panel (in the way concrete exerts pressure). See the Second Declaration of Gregory D. Johnson, paragraphs 13 – 15. In the Second Declaration of Carl A. Forest attached hereto, the data of Sobolev are compared as best they can be compared and it is shown that the difference is well into the range Mr. Rahe indicated to be "amazing". Further, the Second Declaration of Gregory D. Johnson, paragraphs 16 – 19, gives additional insight as to why 10%, 25%, or 30% lower panel deflection is significant in the concrete industry.

The Examiner also asserts that the only relevant comparison is to compare the panel of the invention directly with the panel of Sobolev. This is not possible (and maddening) because the Sobolev panels do not exist. See the Second Declaration of Carl A. Forest, paragraphs 21 – 23.

The other arguments of the Examiner are either disagreements with the arguments Mr. Rahe presented without any support, or misstatements of the law of the *Boesch* case. The Examiner, in particular, continues to insist that Applicant has not responded to his argument in the text of paragraph 21 of paper 5. However, that was answered in the first response to this argument, namely that the *Boesch* facts were quite different than those at present. In *Boesch*, the claimed optimized values were all within ranges disclosed in the prior art, and the prior art suggested changing the values in the direction covered by the claims. The Examiner continues to insist that since Sobolev experimented with different core densities within a range of from 0.8 to 1.3, this shows that one could experimentally find a value outside that range. This is inaccurate for many reasons.

First of all, the Examiner mixes the experimentation of Sobolev on microballons with the experiments on foaming agents, to make it look like there is a broader range. The

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claims recite foam plastic, not a microballon-filled plastic. The Examiner cannot ignore this limitation. See MPEP 2143.03. The range of core densities found with foam plastic, which is what is claimed, is very small in Sobolev. In fact, there is only one test of foam for which the percentage of gas by volume (which is what is claimed) can be found. This is sample IV-17 in Table IVa. The percentage of gas per volume for this can be calculated by subtracting this core density from the core density of 1.223 for the panel with no foam, i.e., the core density for sample IV-1. This gives a percentage of gas per volume of 26%. A value for core density is also given for sample IV-18, but this is for a different resin, and the no-foam core density for this resin is not given. See Tables IVa and IVb spanning columns 23 – 26 in Sobolev. This single data point given in Sobolev is well below the smallest range claimed, i.e., 32%. The Examiner's position is that since Sobolev experimented with a percentage of 26% of gas per volume, experimentation above this range is obvious. However, this does not consider the whole of Sobolev. Sobolev states that chemical blowing agents appear to be less effective in retaining impact resistance (which is related to deflection). See column 22, lines 67 and 68. Further, it states that the production process is more difficult to control for foaming agents and it is more difficult to achieve uniform distribution of the reinforcing fibers in the core. See column 23, lines 1 – 8. Thus, since only a single gas per volume percentage is given in Sobolev, it is not proper to extend the experimentation in Sobolev with microballons to the experimentation with foam. Further, since Sobolev clearly indicates that foam is inferior to microballons in panels, the experimentation with foam, especially at high gas volume densities, is not result-effective and an optimization argument is not appropriate. See MPEP 3144.05 IIB. *Boesch* does not state otherwise.

The Second Declaration of Gregory D. Johnson is also presented to show that the invention has been significantly more successful than the prior art metal/plastic laminations, none of which ever have been used in the concrete formwork. See Second Declaration of Gregory D. Johnson, paragraphs 6 – 12 and Second Declaration of Carl A. Forest, paragraphs 22 and 23. Commercial success is relevant to patentability. See MPEP 716.03.

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In view of the foregoing, claims 1 – 12, 14 – 28, and 39 – 42 are patentable, and their reconsideration and allowance are respectfully requested. No fee is seen to be due. However, if any other fee is required, please charge it to Deposit Account No. 50-1848.

Respectfully submitted,  
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